Reliability Theory

UDC: 621.396.6.019.3

USSR

GRASHCHENKOV, V. S., KOSINSKIY, B. P.

"On a Method of Checking the Operation of Radio Electronic Equipment"

V sb. Sistemy i sredstva avtomat. upr. (Systems and Facilities for Automatic Control), Kiev, 1970, pp 68-73 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V314)

Translation: A mathematical model is considered for the problem of monitoring the functioning of radio electronic equipment. An algorithm for detecting a malfunction is described. Expressions are derived for the probability of a correct decision on the operability of equipment. N. S.

1/1

USSR

UDC: 621.791.72:621.373.8

LEBEDEV, V. K., GRANITSA, V. T., and GRASHCHUK, V. P., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences, Ukrainian SSR

"The Effect of Radiation Pulse Shape on the Depth of the Zone of Fusion During Laser Welding"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 73, pp 10-12

Abstract: The authors present the results from studying the nature of the relation between depth in the fusion zone and radiation energy during the effect of various pulses. The results show that the shape of a radiation pulse with exponentially varying power with respect to time is most rational, since it ensures maximal depth of fusion and minimal energy loss. Copper plate was used as the material to be welded by the optical laser.

USSR

UDC: 621.373:530.145.6

GRASYUK, A. Z., ZUBAREV, I. G., MULIKOV, V. F.

"Stretching a Giant Pulse of a Neodymium Glass Laser by Means of the Forced Raman Scattering Effect in Liquid Nitrogen"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1971, No 2, pp 27-31 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D162)

Translation: The authors report on use of the method of stretching a pulse of Q-switched laser emission by introducing nonlinear losses into the cavity thanks to forced Raman scattering in a neodymium laser. Silicate and phosphate glass rods were used as the active media. Pulse stretching was achieved only for a phosphate glass laser, which yields a considerably narrower emission spectrum. A comparison of experimental data shows that introducing a cell with liquid nitrogen into the cavity causes stretching of each of three initial pulses until they merge into a single pulse, which is due to cessation of amplification in the pulse peak region as a consequence of nonlinear losses with continued amplification of the pulse edges. A. K.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PHOTOSENSITIVITY AND ELECTROLUMINESCENCE SPECTRA OF GAAS-IN,SUB X,GA,SUB 1-X,AS P-N HETEROJUNCTIONS -U-

AUTHOR-(03)-FEDOTOV, YA.A., GRATSERSHTEYN, A.I., ZIMOGOROVA, N.S.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, MAY 1970, P. 980-982

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOELECTROMOTIVE FORCE, PHOTOSENSITIVITY, GALLIUM ARSENIDE PN JUNCTION, LUMINESCENCE SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0897 STEP NO--UR/0449/70/004/000/0980/0982

CIRC ACCESSION NO--AP0136331

UNCLASSIFIED

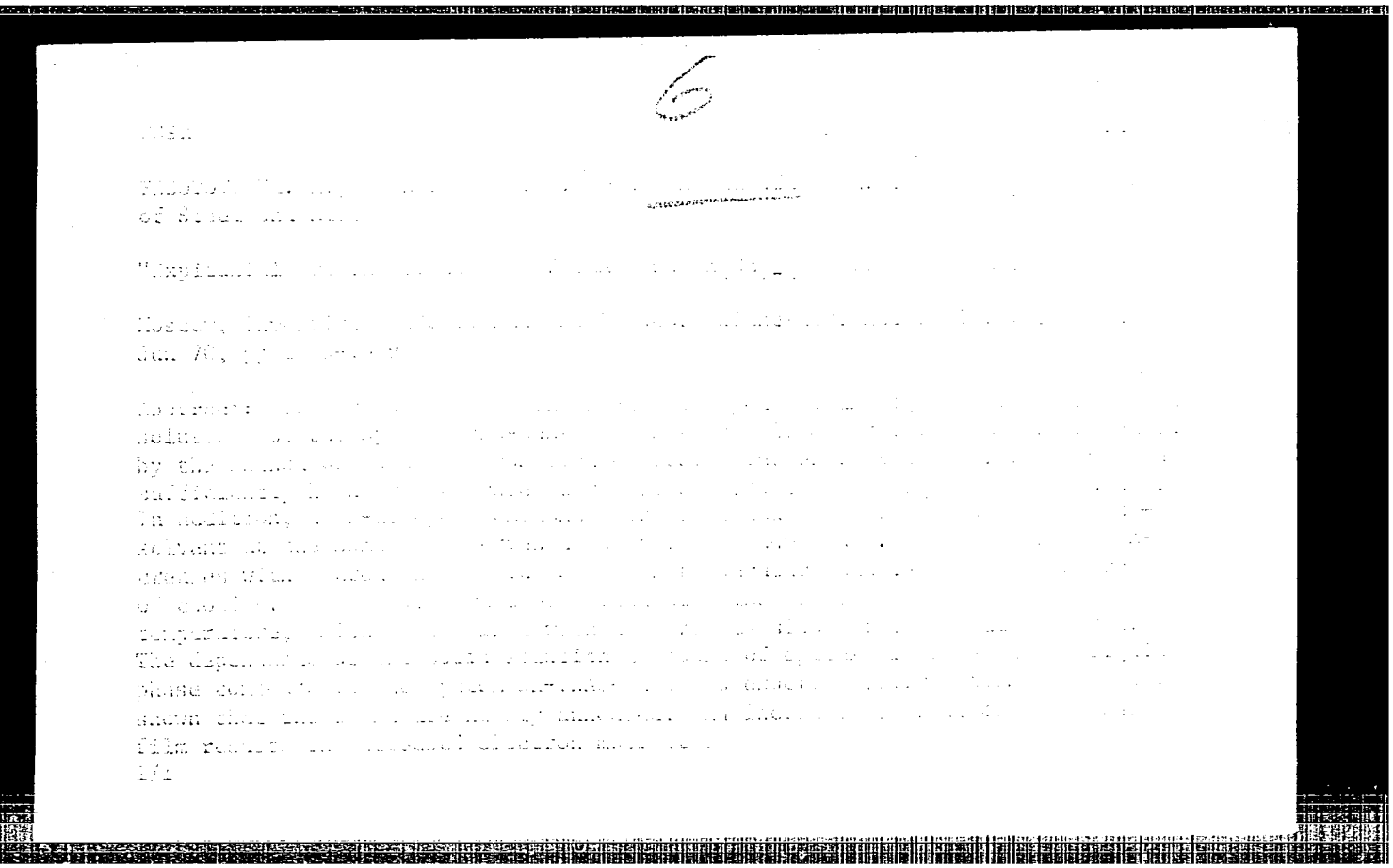
APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201010019-5"

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136331

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETERMINATION OF THE SPECTRAL DISTRIBUTION OF THE PHOTO EMF OF GAAS-IN(SUB X)GA(SUB 1-X)AS P-N HETEROJUNCTIONS AT ROOM TEMPERATURE. IT IS SHOWN THAT A REGULAR CHANGE IN THE PHOTOSENSITIVITY CHARACTERISTICS OCCURS WITH A CHANGE IN THE COMPOSITION OF THE JUNCTIONS. IN ADDITION TO THE MAIN MAXIMUM AT 1.42 EV, DUE TO INTRINSIC ABSORPTION IN GALLIUM ARSENIDE, A SECOND PHOTOSENSITIVITY MAXIMUM OCCURS IN THE VICINITY OF 1.32 EV. WITH AN INCREASE IN THE INDIUM CONTENT IN THE SOLID SOLUTION LAYER THE INTENSITY OF THIS PEAK INCREASES AND THE INTENSITY OF THE PEAK ASSOCIATED WITH THE INTRINSIC ABSORPTION DECREASES. FACILITY: MOSKOVSKII INSTITUT STALI I SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED



1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CIRCULATION OF ALUMINIUM IN THE ECONOMY OF A COUNTRY -U-

AUTHOR-(02)-GRATSERSHTEYN, I.M., AVRASHKOV, L.YA.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METALLY, MAR. 1970, (3), 66-68

DATE PUBLISHED----MAR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ECONOMICS, ALUMINUM, WASTE RECYCLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1922 STEP NO--UR/0136/70/000/003/0066/0068

CIRC ACCESSION NO--AP0132184
UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROSPECTS FOR THE REPEATED RE USE OF AL IN INDUSTRIAL UNDERTAKINGS OF VARIOUS KINDS ARE DISCUSSED. THUS, TO A CERTAIN EXTENT, THE EXPANSION OF PRIMARY AL PRODUCTION IS ONLY NECESSARY TO A LIMITED DEGREE, IN VIEW OF THE LARGE AMOUNT OF SCRAP BECOMING AVAILABLE FROM AL ARTICLES AND PARTS WHICH HAVE FULFILLED THEIR ORIGINAL PURPOSE. A TYPICAL EXAMPLE OF THE RE USE OF AL SCRAP MAY BE FOUND IN THE PRODUCTION OF AL SHEATH CABLES. SOME STATISTICS ARE PRESENTED TO INDICATE THE EXTENT TO WHICH THE REPROCESSING OF AL WASTE IS ECONOMICALLY JUSTIFIABLE.

UNCLASSIFIED

GRATSERSHTEYN P.M.

Acc. Nr.: AP0046494 Ref. Code: [illegible]

USSR

GRATSERSHTEYN, P. M., Engineer, [illegible]

"Interference in Noncontact Control Systems"

Moscow, Promyshlennaya Energetika (Industrial Power Engineering), [illegible], pp 31-33

Translation: In noncontact control systems, inadvertent [illegible] as a result of interference caused by mutual inductance between power and shield cables. A technique for determining interference and measures to lower it are presented. Suggestions for revision of certain paragraphs in Specifications for the Layout of Electrical Installations are presented. (3 illustrations, 2 bibliographic ref.)

1/1

4

Reel/Frame
19781747

USSR UDC: 621.762.2:669.1'24(088.8)

PUTIMTSEV, B. N., GRATSIANOV, Yu. A., KOZLOV, A. G., MINCHER, A. N., LEVINZON, V. Kh., STERLIN, R. G., BAKANOVA, T. P., BIKEZIN, K. P., MIKHEYEV, V. V.

"Method of Production of Iron-Nickel Alloy Powders"

USSR Author's Certificate Number 343771, Filed 7/04/71, Published 11/08/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G394P).

Translation: A method is suggested for embrittlement of Fe-Ni alloys, designed for the production of powders by mechanical grinding. Fe-Ni alloys are embrittled by introduction of S to the initial melt. In order to increase the dispersion and technological properties of the powders, 0.03-0.07 wt % oxygen is also introduced to the initial melt, with a ratio of oxygen to S of 2.0-7.0.

USSR UDC 620.186.14:669.24

TARNOVSKIY, G. A., GRATSIANOV, YU. A., OVCHAROV, V. P., YAKUKHINA, L. I., CHIRKOVA, S. N., and KULIKOVA, L. P., Ural Scientific Research Institute of Ferrous Metals

"Nature of Nonmetallic Inclusions in Alloy 58N Billets"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, Aug 73, pp 44-46

Abstract: Results of correlated studies on the contamination of billets with nonmetallic inclusions are presented. The billets were batch produced (vacuum induction melting) and produced by new means using electron-beam (EBR) and plasma-arc (PAR) remelting, and were made from 58N invar alloy containing (in %): 58 Ni, 0.02 C (max), 0.5-0.8 Mn, 0.2 Si, balance-Fe. The contaminants consist mainly of titanium nitride and alumina minerals. The technological schemes of melting: open induction melting + EBR and open induction melting + PAR provide not only significant lowering of inclusion content but alos producing metal free from large (greater than 7.5 microns) inclusions. Both production methods can be recommended for the industrial manufacture of alloy 58N. From the aspect of minimum inclusion content the EBR method is preferred, but for producing the required nature of inclusions and degree of dispersity the PAR method is better. Two tables.
1/1

USSR

UDC 621.762.2

GRATSIANOV, YU. A., PUTIMTSEV, B. M., and SILAYEV, A. F.,

"Metal Powders From Melts"

Metallicheskiye poroshki iz rasplavov (cf. English above), Moscow, "Metallurgiya," 1970, 245 pp, ill., 73 k (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G403K by authors)

Translation: Some questions regarding the structure of metallic melts are considered, as well as their physical and technological properties. On the basis of experiments, mechanisms of the failure of the flow of metallic melts are analyzed, as well as the shape and structure formation of powder particles. The shape of powder particles and powder dispersity can be regulated. The authors note the large part played by small impurities, superheating, and supercooling in the shape and structure formation of particles. The technological processes for obtaining metal powders and alloys are described. Ninety-three illustrations. Forty-seven tables. Bibliography with 130 titles.

1/1

UDC 621.762.224

USSR

GRATSIANOV, Yu. A., PUTIMTSEV, B. N., and SILAYEV, A. F.

"Metallicheskiye poroshki iz rasplavov" (Metal Powders From Melts), Moscow, Izd-vo "Metallurgiya," 1970, 248 pp

Translation of Annotation: Certain problems of the structure of metal melts and their physical and technological properties are considered. On the basis of experiments, analyses are made of mechanisms of metal fusion stream disintegration, and of the shape and formation of structure of powder particles. It is shown that the shape and size of a powder particle may be controlled. The significant role played by small additions, overheating and overcooling in the formation of particle shape and structure is pointed out. Industrial processes for the production of metal powders and melts are described.

The book is intended for scientific and engineering-technical personnel of research institutes, who are involved with problems related to physical and powder metallurgy and metal ceramics. Ninety-three figures, 47 tables, 130 references.

1/5

USSR

GRATSIANOV, Yu. A., et al., "Metallicheskiye poroshki iz rasplavov" (Metal Powders From Melts), Moscow, Izd-vo "Metallurgiya," 1970, 248 pp

Table of Contents

USSR

GRATSIANOV, Yu. A., et al., "Metallicheskiye poroshki iz rasplavov" (Metal Powders From Melts), Moscow, Izd-vo "Metallurgiya," 1970, 248 pp

USSR

GRATSIANOV, Yu. A., et al., "Metallicheskiye poroshki iz rasplavov" (Metal Powders From Melts), Moscow, Izd-vo "Metallurgiya," 1970, 248 pp



4/5

USSR

GRATSIANOV, Yu. A., et al., "Metallicheskiye poroshki iz rasplavov" (Metal Powders From Melts), Moscow, Izd-vo "Metallurgiya," 1970, 248 pp



5/5

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MAGNETIC PROPERTIES AND MICROSTRUCTURE OF COBALT, PLATINUM, IRON ALLOYS -U-
AUTHOR-(03)-GORBUNOV, V.I., GRATSIANOV, YU.A., KRASNOPEVTSEV, B.S.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 13-16

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ALLOY COMPOSITION, IRON, PLATINUM ALLOY, COBALT CONTAINING ALLOY, IRON CONTAINING ALLOY, ALLOY HEAT TREATMENT, COOLING RATE, MAGENTIC COERCIVE FORCE, SATURATION MAGNETIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1931 STEP NO--UR/0129/70/000/002/0013/0016

CIRC ACCESSION NO--AP0109260
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108260

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF THE FE CONCN. ON THE MAGENTIC PROPERTIES OF ALLOYS CONTG. PT 50, CO 20-50, AND FE 0-30 AT. PERCENT WAS STUDIED. THE ALLOYS WERE COOLED FROM 1300DEGREES IN A FURNACE OR IN AIR OR QUENCHED IN WATER OR OIL AND TEMPERED AT 700-800DEGREES FOR 3 HR. AN INCREASE OF THE FE CONCN. INCREASED THE CRIT. COOLING RATE (WHICH FOR 10, 20, AND 30 AT. PERCENT CORRESPONDED TO COOLING IN AIR, QUENCHING IN OIL, AND IN WATER, RESP.) AND DECREASED COERCIVE FORCE H SUBC THAT FOR 30PERCENT FE WAS SMALLER THAN OR EQUAL TO 1350 OE. INCREASE OF THE DEGREE OF ORDER SIGNIFICANTLY DIMINISHES SATN. BUT THE ALLOYING OF CO-PT ALLOY WITH FE INCREASES IT NOT ONLY IN THE AS QUENCHED BUT ALSO IN THE ANNEALED AND TEMPERED CONDITIONS. THE SATN. OF ALLOYS CONTG. 10-20 AT. PERCENT FE DURING THE 1ST MIN OF THE ISOTHERMAL TEMPERAING RAPIDLY DECREASES BUT THE DEGREE OF THIS DECREASE DIMINISHES WITH AN INCREASE OF FE CONCN. E.G. SATN. OF THE AS QUENCHED (IN WATER) 10 AND 30PERCENT FE ALLOYS WAS 10,100 AND 7300 G AND AFTER 0.25 HR OF TEMPERING AT 800DEGREESC THEY WERE SIMILAR TO 5000 AND SIMILAR TO 7000 G, RESP. THIS EFFECT OF FE WEAKENS WITH A DECREASE OF TEMPERING TEMP. FROM 800 TO 700DEGREES. THE MAGNITUDE OF H SUBC DEPENDS ON THE CONDITION OF ALLOY. THE MAX. H SUBC (3800 OE) WAS OBSD. FOR THE 10PERCENT FE ALLOY TEMPERED AT 700DEGREES. GENERALLY TENARY CO-PT-FE ALLOYS SHOW LOWER H SUBC VALUES BUT GREATER STAN. AND RESIDUAL INDUCTION IN ORDERED AS WELL AS IN DISORDERED STATE THAN BINARY CO-PT ALLOYS.

UNCLASSIFIED

USSR UDC 621.375.82

LOBOV, G. D., SHTYKOV, V. V., and GRATSIANSKAYA, Ye. I.

"On the Possibility of Using the Magnetic Moment of the Electrons of a Semiconductor Plasma to Record $CO_2$-Laser Emission"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 100, pp 70-74 (from RZh-Fizika, No 8, Aug 72, Abstract No D1019 by S. F. Sharlay)

Translation: Formulas are obtained for the magnetization caused by the electrons in the conduction band of a semiconductor cylinder situated in a magnetic field. It is shown that it is possible to record the radiation passing through the semiconductor by measurement of the variable magnetization component. Estimates are given of the voltage appearing on the terminals of the induction coil surrounding the cylinder, as well as of the magnetic field intensity necessary for the case of the passage of $CO_2$-laser radiation ($\lambda$ = 10.6 microns) through InSb, HgTe, and $Cd_xHg_{1-x}Te$.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--PHOTOGRAPHIC FILMS WITH INCREASED SENSITIVITY IN THE VACUUM ULTRAVIOLET SPECTRAL REGION -U-

AUTHOR-(04)-BOGDANOV, S.G., GINDENBERG, N.O., POLYAKOVA, N.V., GRATSIANSKAYA, Z.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. NAUCH. PRIKL. FOTOGR. KINEMATOGR. 1970, 15(2), 126-9

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PHOTOGRAPHIC FILM, UV SPECTRUM, PHOTOGRAPHIC CHEMISTRY, PHOTOGRAPHIC EMULSION, OPTIC INSTRUMENT/(U)FSR9 SPECTROSENSITOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1691 STEP NO--UR/0077/70/015/002/0126/0129

CIRC ACCESSION NO--AP0118669

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE AG (I, BR) EMULSIONS WITH VARIOUS PROPERTIES WERE USED. THE FILMS WERE PREPD. WITH A HORIZONTAL CENTRIFUGE AND THEN EXPOSED IN A FSR-9 SPECTROSENSITOMETER BETWEEN 436 AND 254 NM. THEY WERE DEVELOPED BY A 5 TIMES DILD. D-19 DEVELOPER AT 20DEGREES WITH THE ADDN. OF BENZOTRIAZOLE TO LIMIT FOGGING. THE SENSITIVITY OF ALL FILMS INCREASED SOMEWHAT WITH DECREASING WAVELENGTH OF THE INCIDENT RADIATION. THE SENSITIVITY WAS HIGHER BY ONE ORDER OF MAGNITUDE, AND THE CONTRAST COEFF. WAS HIGHER THAN IN PLATES COATED CONVENTIONALLY WITH THE SAME EMULSIONS. IN THE FAR UV REGION THE SENSITIVITY WAS MUCH HIGHER THAN IN THE CONTROL UF-2T FILM AND WAS EQUAL TO THE SENSITIVITY OF THE FILMS SC-5 AND SC-7. THE APPLICATION OF THE EMULSION LAYER BY CENTRIFUGATION IS A PROMISING METHOD.

UNCLASSIFIED

ELECTRONICS

Amplifiers

USSR UDC: 621.375:621.382.323

GRATSIANSKIY, I. N., ZAKREVSKIY, D. D.

"On Selecting the Operating Mode of a Field-Effect Transistor in an Amplification Stage"

Novosibirsk, Avtometriya, No 1, Jan/Feb 72, pp 86-92

Abstract: The authors analyze causes of nonlinear distortions in FET amplifiers. A method is proposed for determining the off-duty mode of a field effect transistor to reduce nonlinear distortions.

1/1

GRATSIANSKIY I. N.

Acc. Nr.: AT0046525 Ref. Code: 21R0144

USSR

GRATSIANSKIY, IGOR' NIKOLAYEVICH, Candidate of Technical Sciences, Docent of Moscow Power Engineering Institute, LAANSOO, ANTS ARNOL'DOVICH, Associate of Tallin Polytechnical Institute

"Study of the Problems of Optimal Correction of Transient Characteristics of Measuring DC Amplifiers"

Novocherkassk, Izvestiya Vysshikh Uchebnykh Zavadeniy, Elektromekhanika (News of the Institutions of Higher Learning, Electromechanics), No 1, 1970, pp 83-91 (from Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, No 1, 1970, p 115)

Translation: The problems of calculating the parameters of the correcting circuits of measuring DC amplifiers in order to obtain maximum speed, that is, minimum time of establishment of the output voltage under transient conditions with a discontinuous modifying effect, are investigated. Formulas and graphs are obtained which permit calculation of the amplifiers without additional signal transmission channels for the given indexes of speed and accuracy considering scattering of the parameters. There are 2 tables, 8 illustrations and a 3-entry bibliography.

4

1/1

Reel/Frame
19781782

USSR UDC: 621.317.7:621.3.088

GRATSIANSKIY, I. N., LAPSHIN, V. B.

"Error in Circuits With Electronic Measuring Instruments"

Izv. VMYeI "Lenin", 1970, Book 3, pp 116-129 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A191)

Translation: The paper deals with the important problem of certain measurement error components which may arise in measurement circuits which incorporate electronic measuring instruments. The formulation of the problem is outlined. It is pointed out that this is a preliminary report. The following points are discussed: common points of the measurement complex, errors due to parasitic couplings, the effect of the AC network, error due to power consumption, the instrumental error of the devices described. General conclusions are formulated. E. L.

1/1

Miscellaneous

USSR UDC 669.15'26-194:621.787.7

VINOKUR, B. B., GRAUN, M. P., KHIL'CHEVSKAYA, T. V., GELLER, A. L., KULICHENKO, V. P., and SHIYANOVSKIY, V. I., Institute of Casting Problems, Academy of Sciences, Ukrainian SSR

"Carbide Transformations in Complexly Alloyed Steel Containing One Percent Chromium"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 104-108

Abstract: On the basis of studying carbide deposition by chemical and x-ray structural methods the authors concluded that a special chromium carbide $Me_7C_3$ is formed. The methods used include microdiffraction of carbides extracted into a replica, distortions of the second and third type, modifications in the electrical resistance, coercive forces, microhardness, expanding the steel in the state of quenching and annealing at temperatures of 400-650° C. Under ordinary an-



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201010019-5"

USSR

VINOKUR, B. B., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 104-108

nealing conditions this carbide is formed by a gradual restructuring of the iron carbide in proportion to how much it is doped with chromium, manganese, and tungsten. A coherent bond is retained between the lattices. Lengthy annealing at 650° C will result in a separation of trigonal chromium carbide.

Table 1 compares the chemical composition of the carbide phase as a function of annealing temperature; Table 2 identifies the carbide phases after different annealing conditions. Figure 1 shows the influence of annealing temperature on change in the fine crystal structure and certain physical characteristics of a steel. Figure 2 is an electron diffraction pattern of the carbides and an identification of the carbide phases following annealing at 650° C for a period of four hours.

The article contains 2 illustrations, 2 tables, and 9 bibliographic references.

2/2

USSR

GRAVE, P. S., RASTRIGIN, L. A.

"One Mathematical Model of Behavior Synthesis (Subconscious Level)"

Adaptiv. Sistemy [Adaptive Systems -- Collection of Works], No 2, Riga, Zinatne Press, 1972, pp 5-15 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V724, by the authors).

Translation: A mathematical model is suggested for synthesis of behaviour at the subconscious level. The model is a system of differential equations relating the demands for realization of vitally important programs. The operation of the model is illustrated using well-known cases of nervous system pathology -- organic brain damage, neuroses and psychoses.

1/1

USSR

UDC 517.948.5

GEL'FAND, I. M., Corresponding Member of the Academy of Sciences USSR, GRAYEV, M. I., and SHAPIRO, Z. Ya., Institute of Applied Mathematics, Academy of Sciences USSR, Moscow

"Integral Geometry Problem Connected With a Pair of Grassmann's Manifolds"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 2, 1970, pp 259-262

Abstract: The purpose of the article is to formulate and solve an integral problem for a pair of manifolds -- the manifold $G_{n,k}$ of k-dimensional oriented subspaces in $R^n$ and the manifold $G_{n,l}$ of $l$-dimensional oriented subspaces in $R^n$. It is assumed that $l < k$, $l + k \leqslant n$, as well as that $k - l$ is an even number. The results are applied without significant changes to the case of complex Grassmann's manifolds.

1/1

1/2 006 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INTEGRAL GEOMETRY IN PROJECTIVE SPACE -U-

AUTHOR-(03)-GELFAND, I.M., GRAYEV, M.I., SHAPIRO, Z.YA.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, FUNKSTIONAL'NYY ANALIZ I YEGO PRILOZHENIYA (FUNCTIONAL ANALYSIS AND ITS APPLICATION), VOL 4, NO 1, 1970, PP 14-32

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--INTEGRAL RELATION, MATHEMATIC SPACE, PROJECTIVE GEOMETRY, DIFFERENTIAL GEOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1433 STEP NO--UR/0461/70/004/001/0014/0032

CIRC ACCESSION NO--AP0125067

UNCLASSIFIED

2/2 006 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125067

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODOLOGY INCIDENT TO THE STATEMENT OF THE INTEGRAL GEOMETRY PROBLEM IN PROJECTIVE SPACE AND ITS SOLUTION IS RELATED TO A UNIQUE DIFFERENTIAL GEOMETRY ON GRASSMAN MANIFOLDS. ALTHOUGH THE AUTHORS ARE AT A LOSS TO FIND PRACTICAL APPLICATION FOR THE METHODOLOGY TO OTHER PROBLEMS, THE BEAUTY AND NATURE OF THE CALCULATION LEAD THEM TO BELIEVE THAT IT WILL FIND USEFULNESS ELSEWHERE. THE METHODOLOGY IS DESCRIBED ON THE BASIS OF A MANIFOLD G SUBN PLUS 1, K PLUS 1 OF ORIENTED (K PLUS 1) DIMENSIONAL SUBSPACES OF SPACE R PRIMEN PLUS 1. SIX THEOREMS ARE GIVEN AND PROVED FOR DIFFERENTIAL FORMS AND INTEGRAL FUNCTIONS PHI (U). FACILITY: INSTITUTE OF APPLIED MATHEMATICS, ACADEMY OF SCIENCES USSR, MOSCOW STATE UNIVERSITY.

UNCLASSIFIED

Functional Analysis

USSR

GEL'FAND, I. M., GRAYEV, M. I, and SHAPIRO, Z. YA. (Institute of Applied Mathematics, Academy of Sciences USSR; Moscow State University)

"Integral Geometry in Projective Space"

Moscow, Funktsional'nyy Analiz I Yego Prilozheniya (Functional Analysis and Its Application), Vol 4, No 1, 1970, pp 14-32

Abstract: The methodology incident to the statement of the integral geometry problem in projective space and its solution is related to a unique differential geometry on Grassman manifolds. Although the authors are at a loss to find practical application for the methodology to other problems, the beauty and nature of the calculation lead them to believe that it will find usefulness elsewhere.

The methodology is described on the basis of a manifold $G_{n+1,\,k+1}$ of oriented $(k+1)$-dimensional subspaces of space $R^{n+1}$.

Six theorems are given and proved for differential forms and integral functions $\phi(u)$. Orig. art. has 2 refs.
1/1

USSR

UDC 578.087.1

NECHAYEV, I. A., GRAYEVSKAYA, B. M., ZOLOTAREVA, N. N., and CHUDINOVSKAYA, G. A.

"A Statistical Approach to Estimating Individual Radiation Sensitivity in Animals"

Moscow, Matematicheskiye metody v biologii [Mathematical Methods in Biology], Publishing House of Moscow University, 1972, pp 117-126

Abstract: An attempt is made in this paper to give individual, lifetime estimates of the sensitivity of mammals (rats) to radiation on the basis of the experimental material, and thus to indicate approaches to forecasting the result when the animals are subjected to it. The system according to which the authors make their computations is based on the important concept of the slight regression in individual indexes in accordance with selected tests of radiation sensitivity, on the one hand, and the almost complete absence of correlations between the tests, on the other. After an exposition of the history of the subject of animal sensitivity to radiation, the authors proceed to an analysis of correlation functions for the purpose of obtaining indexes permitting estimates of the relative sensitivity to radiation of animals without actually irradiating them. The authors use these criteria

USSR

NECHAYEV, I. A., et al., Matematicheskiye metody v biologii, Publishing House of Moscow University, 1972, pp 117-126

for the condition of the animals: first, the amount of sugar in the blood and the reaction of the blood to the introduction of adrenalin; second, the proteinase action of the blood computed according to the formula $P_u = (P_t - P_0)/P_0$, where $P_0$ is the activity of the blood proteinase before incubation, and $P_t$ is the activity of the blood proteinase after 24 hours of incubation at a temperature of 37°C; third, the number of leukocytes in the peripheral blood. A table comparing the actual results with the results predicted by this statistical method shows a close correlation.

Oncology

USSR UDC 616-006-092.9-022:6:576.858.5

STRIZHACHENKO, N. M., GRAYEVSKAYA, N. A., and LEVENBUK, I. S., All-Union Institute of Experimental Veterinary Science, Institute of Poliomyelitis and Virus Encephalitides, and State Control Institute of Medical Biological Preparations imeni L. A. Tarasevich, Moscow

"Some Biological Properties and Morphological Characteristics of a Transplantable Tumor Induced in Hamsters by Bovine Adenovirus Type 3"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 80-82

Abstract: A type 3 adenovirus isolated from a healthy cow was pathogenic for hamsters, producing tumors in them (J. H. Darbyshire, et al., Nature, Vol 211, p 102, 1966; J. Comp. Path., Vol 75, p 327, 1965). The oncogenic strain WBR-1 of the virus in question, which was obtained from Darbyshire, was used in experiments on the transplantation of tumors in hamsters. The tumors (BATH) were highly transplantable; within 5-6 days 100 percent of the implanted cells became adapted to hamsters of any age. The high transplantability was due to an absence of transplantation antigens in the passaged tumors. The initial tumor and the transplanted tumors could be classified as angiogenic sarcomas of the malignant hemangipericytoma type. The tendency towards formation of

1/2

USSR

STRIZHACHENKO, N. M., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 80-82

blood vessels in the tumors was preserved up to the 50-60th passage of the tumor and then disappeared, whereupon the tumors changed to the undifferentiated sarcoma type. The BATH cells underwent more than 60 passages in hamsters. These cells and the tumors produced by them appear to be good models for the study of problems pertaining to virus-induced cancer formation.

2/2

USSR

UDC 61:796

KUKOLEVSKIY, G. M., and GRAYEVSKAYA, N. D.

Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

Translation: Annotation: The book Osnovy Sportivnoy Meditsiny is a handbook for doctors working in the fields of physical training and sport. The book consists of sections devoted to the questions which are most urgent for the practicing physician concerning organization of the medical-physical training service, the effect of systematically engaging in physical exercises on the organism, methods of medical observation of those exercising, diagnosing physical condition, physical training and sport hygiene, and preventing athletic injuries.

The book is written on the basis of modern scientific data and a generalization of leading experience, and it will supply the necessary knowledge for doctors who observe physical training participants and athletes.

The book devotes special attention to medical investigation of athletes, and determining their health, physical development, functional capacities of the organism, and level of conditioning.

1/9

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

At the present time, due to the widespread development of physical training and sports and the broad deployment of the medical-physical training service, and the enlisting of the entire network of treatment in preventive institutions of health agencies in medical support for the physical training movement, a great need is felt for handbooks for doctors on special questions of sport medicine.

The last handbook on sport medicine came out in 1961. Since then science has been enriched with important new data and the organization of practical work in the area of medical checkups has improved. All this makes it necessary to publish a new handbook on sport medicine.

The book Osnovy Sportivnoy Meditsiny is designed not only for sport doctors, but also for doctors working in the areas of therapeutic physical training, functional diagnosis, aviation and space medicine, labor hygiene, occupational pathology, and medical-labor certification.

There are 52 tables and 75 bibliographic entries.
2/9

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

Foreword

In our country, physical training and sport are assigned enormous importance as one of the factors in the harmonious development of the citizen of the new communist society. The Soviet system of physical education encompasses physical training exercises and sport by the broad masses of the population from birth to old age.

Physical training and sport have become truly widespread and popular. With every year more and more new millions of people of different ages and occupations join in the exercise, which reflects the continuously growing level of the people's cultural and physical standard of living and the constant concern of the Communist Party and Soviet Government for the health of Soviet people.

Individual elements of the unified system of physical education include morning hygienic exercises and conditioning, exercising at the production site, compulsory lessons in physical education at all educational institutions, sport exercises in the sections of voluntary sport societies, tourist hikes, exercises in "health groups" for middle-aged and elderly citizens, therapeutic

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

physical training for persons with health problems, and the enormous number of sports contests, spartakiads, and holidays. More than 50 million people in the country have now become involved in organized physical exercise. The army of skilled athletes, whose achievements in the international arena are universally recognized, grows rapidly on the basis of the mass physical training movement.

The history of Soviet physical training and Soviet health services is unfailingly characterized by constant concern for using physical training in sport to strengthen the health of the working people.

The 1966 decree of the CPSU Central Committee and USSR Council of Ministers on the development of physical training and sport in the country places before Soviet health services the task of further improving the organization and quality of medical support to the physical training movement and intensifying the role of medical and biological disciplines in scientifically substantiating the system of physical education for the people and training for leading athletes.

4/9

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

The world's leading system of medical support for the physical training movement, the system of the specialized medical-physical training service, has been established in our country. However, maintaining medical checks on the many millions who are involved is only possible where the entire network of treatment and preventive institutions of health agencies participate in this work.

Medical study of healthy people engaging in physical training and sport has a particular nature, involving the necessity of establishing not only the very earliest signs of disease and impairments in the functional state of the organism which are not even considered in ordinary medical practice, but also determining the level of a person's functional capacities in order to establish his state of conditioning and consciously control the process of physical education and athletic training. All this requires that the doctor have special knowledge in the area of sport medicine -- a branch of preventive medicine whose primary purpose is to assist in strengthening a person's health and raising the level of his physical development and functional capacities through physical training and sports.
5/9

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

We have attempted to present the basic divisions of sport medicine in this book.

In recent years, sport medicine has significantly grown and accumulated many scientific data which are of substantial interest not only for doctors who observe persons engaging in physical training and sport, but also for a number of related branches of medical science.

This book does not claim to be a textbook, and a number of questions of sport medicine are not treated in it. We have concentrated our attention on the basic questions which are of greatest theoretical and practical significance for the work of the sport doctor.

The authors will consider their task to be fulfilled if this book helps doctors to a certain degree in their everyday work. We will receive all critical remarks and requests with gratitude.

The first and fifth sections of the book were written by G. M. Kukolevskiy, while the second and fourth parts were written by N. D. Grayevskaya. The

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp

third part was written by the authors jointly. Chapters three and four were written by V. S. Dyadicheva and G. M. Kukolevskiy.

Table of Contents:

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp



8/9

USSR

KUKOLEVSKIY, G. M. and GRAYEVSKAYA, N. D., Osnovy Sportivnoy Meditsiny (Fundamentals of Sport Medicine), Moscow, "Meditsina," 1971, 368 pp



9/9

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SYNTHESIS OF POLYLYSINE IN THE CELL FREE SYSTEM FROM E. COLI -U-

AUTHOR-(04)-BRESLER, S.YE, GRAYEVSKAYA, R.A., MEREMAA, L.A., SAMINSKIY, YE.M.
COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 190-200

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESCHERICHIA COLI, BIOCHEMISTRY, RIBOSOME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0098 STEP NO--UR/0463/70/004/002/0190/0200

CIRC ACCESSION NO--AP0103778
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYA DIRECTED SYNTHESIS OF POLYLYSINE IN THE CELL FREE SYSTEM FROM E. COLI WAS STUDIED. IT HAS BEEN SHOWN THAT THE MOLECULAR WEIGHT DISTRIBUTION OF THE SYNTHESIZED PRODUCTS IS INDEPENDENT ON INCUBATION TIME AND THE TOTAL NUMBER OF POLYLYSINE CHAINS EXCEEDS THE NUMBER OF RIBOSOMES IN THE INCUBATION MIXTURE. IT MEANS THAT IN THE COURSE OF THE REACTION A CHAIN TERMINATION MECHANISM OF UNKNOWN ORIGIN IS INVOLVED. THIS LEADS TO THE DISSOCIATION OF ACTIVE RIBOSOME COMPLEX AND RELEASE OF THE POLYLYSYL-TRNA WHICH IS INACTIVE IN THE DISPLACEMENT REACTION WITH PUROMYCIN. AFTER THAT THE INITIATION OF A NEW CHAIN ON A FREE RIBOSOME TAKES PLACE. DUE TO THIS THE TIME OF INDIVIDUAL CHAIN GROWTH IS SMALL AS COMPARED TO THE FULL INCUBATION TIME AND THE CHAINS ARE SHORT. THE OVERALL KINETICS OF POLYLYSINE SYNTHESIS REFLECTS KINETICS OF INITIATION OF NEW CHAINS RATHER THAN THAT OF INDIVIDUAL CHAINS GROWTH. THE RATE OF INITIATION DECREASES GRADUALLY WITH THE TIME OF INCUBATION AND CAN BE PARTIALLY RESTORED AFTER NEW ADDITION OF POLYA, ATP, GTP, TRNA.

UNCLASSIFIED

USSR

UDC 577.1.:615.7/9

IZMOZHEROVA, Ye. L., GRAYFER, A. L., and KHOLODENKO, D. R.

"Effect of Some Diphenylcarbinol Derivatives on Hematopoiesis in Irradiated and Intact Animals"

Izv. Yestestvennonauchn. in-ta pri Permsk. un-te (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 10, pp 127-142 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstract No 9 F1906 by M. Sh.)

Translation: Experiments involving intraperitoneal injection of irradiated rats with diphenylcarbinol (I) derivatives containing one to three radicals showed that the radioprotective effect (bone marrow hematopoiesis) was highest when three radicals of $N(CH_3)$ were present in the I molecule.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--QUANTITATIVE RELATIONS FOR CALCULATION OF FACET RETICULAR DENSITY AND ATOM BONDS ON FACETS OF CRYSTALS WITH DIAMOND OR ZINC BLEND
AUTHOR-(02)-GRAYFER, M.Z., MIRONOV, K.YE.

6

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDLENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 51-57
DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--DIAMOND, CRYSTAL, ZINC, MINERAL, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0579 STEP NO--UR/0289/70/000/000/0051/0057

CIRC ACCESSION NO--AP0113470
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113470

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORRELATIONS FOR CALCULATION OF FACET RETICULAR DENSITY AND ATOM BONDINGS ON (H11), (HH1) AND H10) FACETS OF DIAMOND OR ZINC BLENDE CRYSTAL STRUCTURE TYPES ARE GIVEN. THESE CORRELATIONS ARE BASED ON LATTICE PARAMETERS AND FACET INDEX H. IF FREE SURFACE ENERGY OF EVERY FORM PRINCIPAL FACETS IS KNOWN IT IS POSSIBLE TO ESTIMATE THE FREE SURFACE ENERGY OF (H11), HH1) AND (H10) FACETS. FACILITY: INSTITUT NEORGANICHESKOY KHIMII SO AN SSSR, NOVOSIBIRSK.

UNCLASSIFIED

USSR

UDC 629.7.063.7(088.8)

SKOTNIKOV, P. A., SALTAYS, E. A., SALUGIN, V. K., GRAYFER, N. P., ZAV'YALOV, V. I.

"Bypass Valve for Aircraft Engine Lubrication System"

USSR Authors' Certificate, Class B 64 d 33/00, F 16 k 5/00, No. 305104, Announced 3 February 1970, Published 10 September 1971 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.66 P)

Translation: A bypass valve for an aircraft lubrication system according to Authors Certificate No. 295712 (see RZh-Aviatsionnyye i raketnyye dvigateli, 1971, 12.34.42) is patented but is distinguished by the fact that to reduce hydraulic resistance the cavity of the shut-off element is separated by a partition into two chambers, radial slits in which have opposite angular displacement relative to the corresponding slits in the overlapping bushing separated from the bimetallic spiral by a cylindrical screen. 2 ill., Resume.

USSR

GRAYFER, R. S., KARPEL', I. N.

"The Distribution of Operator Errors"

Sb. tr. Tsentr. n.-i. i proyekt.-tekhnol. in-t organiz. i tekhn. upr. [Collected Works of Central Scientific Research and Planning-Technological Institute for Organization and Technology of Control], 1972, No 9, pp 170-177 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V250 by the authors)

Translation: Results are presented from statistical tests of the work of operators of keyboard devices, and used as a basis for construction of a histogram for the statistical distribution of operator errors, and the smoothing parameter of a Poisson distribution is determined. The degree of divergence between the statistical histogram and the theoretical distribution of Poisson is estimated using the $\chi^2$ criterion.

Based on the statistical data, an analytic expression is produced for the distribution density of the intervals between errors, not contradicting the Poisson rule of distribution of operator errors.

1/1

USSR

SHANDITSEV, V. A., VERESHCHAGIN, L. F., YAKOVLEV, YE. N., GRAZHDANKINA, N. P., and ALAYEVA, T. I., Institute of High-Pressure Physics, Academy of Sciences USSR, Akademgorodok, Moscow Oblast

"Electron Magnetic Resonance Study of Chromium Telluride at Pressures up to 50 Kbar"

Leningrad, Fizika Tverdogo Tela, Vol 15, Vyp 1, Jan 73, pp 212-215

Abstract: The electron magnetic resonance method ($\lambda \approx 3.2$ cm) was used to study the magnetic transition in chromium telluride at pressures up to 50 kbar and temperatures of 100-360° K. It was found that the linear variation of the Curie point with pressure continues up to 25 kbar. At pressures from 30±4 and up to 50 kbar, the resonance line characteristic of the ferromagnetic phase of CrTe is not observed in the 100-300° K temperature range. The disappearance of the resonance line of the ferromagnetic phase may be due to the appearance of antiferromagnetic ordering at pressures above 30 kbar in chromium telluride, although the antiferromagnetic resonance line cannot be observed in this frequency region.

1/1

1/2 037 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INVESTIGATION OF THE ANTIFERROMAGNETISM FERROMAGNETISM TRANSITION IN THE COMPOUND MN SUB1,88 CR SUB0,12 SB -U-

AUTHOR-(05)-GRAZHDANKINA, N.P., BURKHANOV, A.M., BERSENEV, YU.S., ZAYNULLINA, R.I., MATVEYEV, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1178-1185

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--MAGNETIC TRANSFORMATION, TRANSITION TEMPERATURE, FERROMAGNETIC MATERIAL, ANTIFERROMAGNETIC MATERIAL, STRONG MAGNETIC FIELD, HIGH PRESSURE EFFECT, CRYSTAL ORIENTATION, CRYSTAL DEFORMATION, ANTIMONIDE, MANGANESE COMPOUND, CHROMIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1502 STEP NO--UR/0056/70/058/004/1178/1185

CIRC ACCESSION NO--AP0106258

UNCLASSIFIED

2/2 037 UNCLASSIFIED PROCESSING DATE--[illegible]

CIRC ACCESSION NO--AP0106298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HIGH PRESSURE (UP TO P EQUALS 11000 ATM.) AND A STRONG MAGNETIC FIELD (UP TO 300 KOE) ON THE ANTIFERROMAGNETISM FERROMAGNETISM TRANSITION TEMPERATURE T OF THE MN SUB1,38 GE SUB0,12 SB COMPOUND IS INVESTIGATED AND THE VALUES OF DT SUBS-DP AND DT SUBS-DH ARE DETERMINED. THE MEASUREMENTS ARE PERFORMED WITH SINGLE CRYSTAL SAMPLES. THE ELASTIC PROPERTIES OF THE COMPOUND ARE INVESTIGATED AND DILATOMETRIC MEASUREMENTS IN VARIOUS CRYSTALLOGRAPHIC DIRECTIONS ARE CARRIED OUT. THE RESULTS OBTAINED ARE DISCUSSED IN LIGHT OF THE KITTEL EXCHANGE INVERSION THEORY OF MAGNETIC PHASE TRANSITION OF THE FIRST KIND. FACILITY: INST. FIZIKI METALLOV AN SSSR.

UNCLASSIFIED

USSR

DITMAN, A. O., GRAZHDANOV, I. M., FILATOV, S. M., MAKSIMOV, N. A., DIANOV, G. P., and DMITRIYEVSKIY, I. V.

"Device for Simulating the Aerodynamic Characteristics of Aircraft"

USSR Authors' Certificate No 378885, Cl. G 06g 7/44, filed 15 Jun 71, published 18 Apr 73 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1973, p 132)

Abstract: The device contains a magnetic cabin, a full-scale research model, a system of conductors to simulate a stationary vortex sheet, a power supply unit, commutators, a zero indicator, and groups of sensors. The distinctive feature is that, to expand the class of problems that can be solved, it contains a system of U-shaped conductors mounted in the magnetic cabin in the plane of the system of stationary vortex sheet-simulating conductors, a circulation monitor connected to the system of vortex sheet-simulating conductors, coders, and a computing unit connected to the data unit. The full-scale research model is mounted in the magnetic cabin and is connected to the

USSR

DITMAN, A. O., et al., USSR Authors' Certificate No 378885

system of stationary vortex sheet-simulating conductors. The first group of sensors mounted on the exit edge of the full-scale model is connected through the first commutator to the zero indicator; the second group, through the second commutator to the input of the first coder, whose output is connected to the first input of the computing unit, the second input of which has connected to it the output of the second coder, which is connected through the third commutator to the output of the circulation monitor.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EPR IN PLASTIC DEFORMED SILICON -U-

AUTHOR--GRAZHULIS, V.A., OSIPYAN, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1259-1264

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--PLASTIC DEFORMATION, SILICON, EPR, CRYSTAL DISLOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1002 STEP NO--UR/0056/70/058/004/1259/1264

CIRC ACCESSION NO--AP0105866

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105866

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WEAKLY DOPED SILICON CRYSTALS ARE INVESTIGATED EXPERIMENTALLY BY THE ELECTRON PARAMAGNETIC RESONANCE TECHNIQUE. PARAMAGNETIC CENTERS PRODUCED DURING PLASTIC DEFORMATION OF THE CRYSTALS ARE DETECTED. THE CONCENTRATION OF THE CENTERS MONOTONOUSLY INCREASES WITH INCREASE OF THE DEGREE OF DEFORMATION. THE EPR SPECTRUM OF THE CENTERS IS ANISOTROPIC AND POSSESSES AN INCOMPLETELY RESOLVED FINE STRUCTURE. INTENSE ANNEALING OF THE CENTERS OCCURS ONLY AT T IS GREATER THAN OR SIMILIAR TO 600DEGREESC, THE ACTIVATION ENERGY OF THE ANNEALING PROCESS BEING SIMILIAR TO 2 EV. IT IS SUGGESTED THAT THE CENTERS OBSERVED ARE DUE TO ELECTRONS OF BROKEN BONDS IN DISLOCATION NUCLEI WITH BOUNDARY COMPONENTS.

UNCLASSIFIED

USSR UDC: 621.373:530.145.6

GRAZYUK, A. Z., POPOVICHEV, V. I., RAGUL'SKIY, V. V., FAYZULLOV, F. S.

"Increasing Emission Brightness by Means of a Brillouin Laser"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 70-78 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D184)

Translation: It is shown that pumping intensity, energy density and pulse length must exceed certain threshold values to increase brightness by means of lasers on forced scattering. Two Brillouin lasers are experimentally studied: a carbon disulfide laser with brightness amplification, and an ether laser without brightness amplification. A special ruby laser with parameters which satisfy conditions of brightness amplification was used for pumping the carbon disulfide laser. The following characteristics are obtained for a carbon disulfide Brillouin laser: energy efficiency 2 percent; divergence of converted emission $3 \cdot 10^{-4}$ radian (close to diffraction); brightness amplification by a factor of 9. Efficiency in the Brillouin ether laser is 20 percent. Five illustrations, two tables, bibliography of eighteen titles. Resumé.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EVALUATION OF THE SUSCEPTIBILITY OF STEEL TO REVERSIBLE TEMPER BRITTLENESS -U-

AUTHOR-(03)-GLIKMAN, YE.E., GRDINA, YU.V., KOTYSHEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 113-17

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL BRITTLENESS, STEEL HEAT TREATMENT, MANGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1789 STEP NO--UR/0148/70/013/002/0113/0117

CIRC ACCESSION NO--AT0115618

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201010019-5"

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0115618

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FIVE STEELS WERE REFINED BY ANNEALING IN H, QUENCHING IN WATER FROM 1000-1150 AND 920-500EGREES, AND SUBJECTED TO "DOUBLE TEMPERING" (E. E. GLIKMAN, ET AL., 1967). A TOUGH STATE WAS PRODUCED BY COOLING IN WATER FROM 650DEGREES, WHILE THE BRITTLE STATE WAS PRODUCED BY HOLDING AN ADDNL. 24 HR AT 530DEGREES. WITH STEELS CONTG. 1.50-1.85PERCENT MN, 2 TEMP. REGIONS OF BRITTLENESS DEVELOPMENT WERE DETD. (500-50 AND 600-50DEGREES). ADDNL. STUDIES ARE NECESSARY TO EXPLAIN THE NATURE OF HIGH TEMP. BRITTLENESS.

FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

USSR UDC 662.997.621.316.344.4

TOROPTSEVA, T. N., BAYBAKOVA, N. N., GREBELYUK, I. I., BLAGOVESHCHENSKAYA, I. F., All-Union Order of the Red Banner Scientific Research Institute of Current Sources

"An Investigation of the Behavior of Silicone Polymer Materials Under the Operating Conditions of Solar Power Installations"

Tashkent, Geliotekhnika, No 6, 1970, pp 38-39

Abstract: A report is given on an analysis and operational testing of three new types of bonding material - silmethylene, polysiloxysilazane, and silazane, with regard to their use in solar power installations. It is found that L-24-7 polysiloxisilazane varnish and L-24-7 silazane varnish have favorable long-time aging properties against light and weather, stability to abrupt temperature changes, which, in conjunction with good properties of adhesion to concentrators and semiconductors, mechanical strength and resistance to solvents, qualify them for use as protective coatings for the workings surfaces of photocells and concentrators.

1/1

USSR

UDC 621.791.793:546.821

KOMPAN, YA. YU., GUREVICH, S. M., and NOVIKOV, YU. K., Institute of Electric Welding imeni Ye. O. Paton, and GREBEN', K. A., Institute of Gas, Academy of Sciences Ukr SSR

"Molten Bath Bubbling in the Electroslag Welding of Titanium Alloys"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 72, pp 15-16

Abstract: A study was made to determine the optimum depth of gas jet penetration into the weld bath in the electroslag welding of VT1 titanium alloy with a thickness of 40 mm. The gas bubbles remove nonmetallic inclusions from the bath and allow the fluxes to better react with the oxides in the metal bath. The formula used to determine optimum gas jet penetration, proposed by K. A. Greben', was:

$$h = \omega \sqrt[3]{\frac{\rho}{g} d / g \gamma_M}$$

where $\omega$ -- jet velocity at the instant of entering the metal bath, m/sec; $\rho$ --gas density, kg/m$^3$; d--jet diameter, m; g--acceleration of gravity, m/sec$^2$, $\gamma_M$--liquid metal density, kg/m$^3$. For a bath temperature of 1900-2200°C the depth of gas penetration into the molten metal was 13 mm at 1900°C and 14 mm

1/2

USSR

KOMPAN, YA. YU., et al., Avtomaticheskaya Svarka, No 10, Oct 72, pp 15-16

at 2200°C. Bubbling the weld bath with arbon made it possible to obtain joints with a reduced oxygen and nitrogen content, increased ductility, and a finer grain structure in the seam metal. 2 figures, 2 tables, 4 equations.

2/2

USSR UDC 678.183.123

TULUPOV, P. Ye., BUTAYEV, A. M., GREBEN', V. P., and KASPEROVICH, A. I., Scientific Physical-Chemical Research Institute Imeni L. Ya. Karpov, Moscow

"Kinetics of Elimination of the Ion Exchange-Resin Functional Groups. IX. Reversibility of the Reaction of Hydrolytic Cleavage of the Sulfonyl Group of KU-2 Cation Exchange Resin"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 47, No 1, Jan 73, pp 150-153

Abstract: The behavior of the cation exchange resin KU-2 X 8 on heating in a wide range of the concentrations of sulfuric acid solutions was studied. It was shown that thermal hydrolysis of KU-2 sulfonyl groups is complicated by sulfation. Kinetic equations were obtained which described the changes in the exchange capacity of the cation exchange resin with two concurrent reactions taking place: hydrolysis of sulfonyl groups and sulfation of the cation exchange resin matrix.

Ion Exchange

USSR

UDC 678.742.2;678.029.5:62-278/01

TULUPOV, P. YE., ZHUKOV, M. A., KOSSAYA, A. M., RASHKOV, A. B., GREBEN', V. P. and KOSTYUKHINA, L. I.

"Preparation and Properties of Heterogeneous Ion-Exchange Membranes"

Moscow, Plasticheskiye Massy, No 2, Feb 72, pp 60-63

Abstract: Operational features of ion-exchange membranes depend upon a complex of physico-chemical, electrochemical and mechanical properties, and also upon the stability of such properties during use.

Studied here are high-density polythylene membranes prepared with the cationite KU-2 and the anionites AV-17 and EDE-10-P, with careful control of moisture content and particle size. These ionites, taken in various proportions and particel sizes, and with both capron and dacron binders, were tested regarding their effect on fusion coefficient, tensile strength and electrical parameters; temperature was also evaluated in this connection.

Electric conductivity for these heterogeneous ion-exchange members was found to follow the laws already established for homogeneous and interpolymer membranes. Tentative optimal values for the variables mentioned are suggested. Graphs illustrating variation in conductivity, etc. accompany the paper.

1/1

USSR

UDC 678:541.183.123_7.019.34

TULUPOV, P. YE., and GREBEN', V. P.

"Chemical Stability of the Ion-Exchange Membrane Ankalite K-2"

Moscow, Plasticheskiye Massy, No 10, 1971, pp 53-55

Abstract: Results are reported on the study of the stability of the ion exchange membrane Ankalite K-2 in water, acid solutions, and NaOH. It has been established that with increased concentration of the external acid solution the rate of hydrolysis of the membrane's thio groups increases almost proportionately to the concentration of this external acid solution. Depending on the type of acid, the rate of the decrease of exchange capacity varies; it increases in the sequences $HNO_3 < HCl < H_2SO_4$. Electric resistance of the membrane Ankalite K-2 after a contact with $HNO_3$ solutions increases with the increase in the acid concentration, while the number of ion transfers remains practically unchanged. The thio groups in the K-form and in 3N NaOH solutions are more stable towards hydrolysis than the H-form thio groups.

1/1

USSR UDC 678.541.183.123,541.15

TULUPOV, P. YE., and GREBEN', V. P., Physiocochemical Institute imeni L. Ya. Karpov, Moscow, State Committee for Chemistry

"Radiation Reistance of Ion-Exchange Membrane Ankalit K-2 in Water"

Moscow, Khimiya Vysokikh Energiy, Vol 4, No 3, May-Jun 70, p 275

Abstract: The principal degradation products in the irradiation of the membrane Ankalit K-2 in water (dose over 200 Mrad) are HCl and $KHSO_4$. The kinetics of $KHSO_4$ and HCl build-up in the irradiation of Ankalit K-2 is governed by a zero-order equation with constants $7 \cdot 10^{-4}$ and $4 \cdot 10^{-2}$ mole/kg·Mrad in the 0-200 Mrad dose range and $4.75 \cdot 10^{-4}$, $2.72 \cdot 10^{-2}$ mole/kg·Mrad in the 200-1000 Mrad dose range. According to elementary analysis data, "inactive" sulfur is absent in the irradiated membrane in contrast to the cation exchanger KU-2. Its content corresponds to the exchange capacity found at pH 4.5. Another feature distinguishing the behavior of the membrane Ankalit K-2 from the KU-2 cation exchanger during irradiation is the formation of

USSR

TULUPOV, P. YE., and GREBEN', V. P., Khimiya Vysokikh Energiy, Vol 4, No 3, May-Jun 70, p 275

large quantities of weakly acid groups with pK 6.9 (0.49 and 0.20 at doses of 1000 and 600 Mrad). Cnanges in the coefficient of moisture capacity and weight loss indicate that processes of macromolecule degradation, rather than cross-linking, occur preferentially during irradiation of the membrane. The most radiation-sensitive property of Ankalit K-2, as in the case of other membranes, is mechanical strength. An elementary cell structure is suggested for the membrane on the basis of an analysis of experimental data and IR spectra.

2/2

AA0047079 Greben', Yu. I. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241700 FILM THICKNESS CHECK RIG to control it during its application on cathode (13) from atomizer (15) has on the same rotating holder as the cathode a transparent indicator (3). The film thickness on the latter is compared with that on a reference indicator by a photoelectronic system which is actuated periodically by lamp (1) switched on by pick-up (11). When the required film thickness has been reached, the atomizer is cut off.
26.1.68 as 1214955/25-28. I.A.PRUDVIBLOKH et alia.
LVOV POLYTECHNIC (25.8.69) Bul 14/18.4.69. Class 42b
Int.Cl.G 01 b.

18

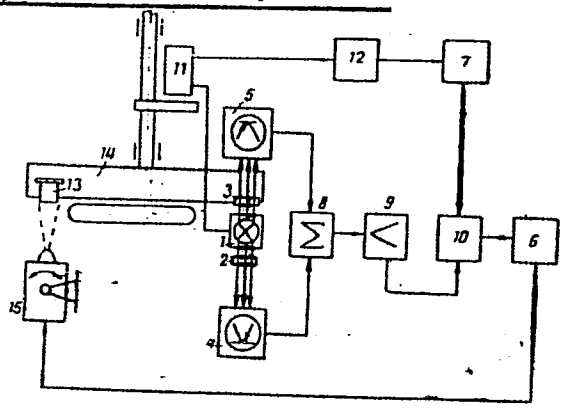
1/2

19790550

AA0047079

AUTHORS: Prudviblokh, I. A.; Greben', Yu. I.; Kedra, Yu. V.; Marets, V. M.; Traube, L. V.; Oranskiy, G. A.; Soroka, B. P.

L'vovskiy Politekhnicheskiy Institut




1/2

19790551

USSR

UDC 632.938:616.992:632.4

YARCSHENKO, T. V., GREBENCHUK, Ye. A., NIKITINA, A. V., and KUZICHEVA, V. V., Kharkov State University

"Plant Immunity to Different Kinds of Parasites"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 235-240

Abstract: Long-term studies on different plant families (Gramineae, Chenopodiacea, Solanaceae) show that they have similar immunological responses to fungus infections regardless of the biological characteristics, evolutionary development, and nature of the parasitism of the pathogens, e.g., Erysiphe graminis, Ustilago zeae, Cercospora beticola, Peronospora schachti, Tilletia tritici, Sphacelotheca panici-miliacea, and Puccinia triticina. These pathogens all undergo recessive changes in the host plants in the form of hypoplasia, plasma degeneration, and lysis. It would appear, therefore, that the processes by which physiological immunity is formed are basically similar even when induced by different agents.

1/1

GREBENEV, A. L.

[illegible] ACHIEVEMENTS AND PLANS OF ADVANCED TRAINING OF MEDICAL [illegible]

[illegible] ACCORDING TO QUESTIONS AND SUGGESTIONS OF STUDENTS ON THE [illegible] OF [illegible] ADVANCED INSTRUCTOR TRAINING, MOSCOW MEDICAL INSTITUTE [illegible]

[illegible] Article by Prof. Sophia Yak. Grebenev, Faculty of Advanced Training [illegible] at Professor M.F. Sudilovskaya, First Moscow Medical Institute imeni I.M. Sechenov (Head: Professor N.I. Kuzin, corresponding member of the USSR Academy of Medical Sciences); Moscow, Sovetskoye zdravookhraneniye, Russian, No 10, 1972, submitted 25 May 1972, pp 48-51]

The decisions of the 24th Congress of the USSR Communist Party on improvement of higher education and development of medical science in the nation. One of the effective means of obtaining success in this direction is the system of advanced training for higher school instructors.

The faculty of advanced instructor training (FPK) was founded at the First Moscow Medical Institute imeni I.M. Sechenov in 1955. As a result of considerable organizational and methodological work three [illegible] directions were developed and clearly defined on this faculty: 1) [illegible] participants' instructors; 1) work to improve pedagogic skills, [illegible] the qualifications of the instructor as a highly competent specialist in his field, and 3) to acquaint the class with the latest investigations, techniques and scientific directions in their "own" as well as allied and related chairs. As shown by the experience of this faculty, organization of teaching and methodological, as well as scientific work in these directions has been completely justified.

Since 1966, about 2,000 instructors from different medical [illegible] the nation underwent advanced training on this faculty. [illegible] work continuously, the administration of the faculty always takes into consideration the comments and suggestions made by these attendees [illegible] classes. Some of them deserve to be published, since they are of [illegible] to all instructors or also stimulate discussion.

The FPK dean's office sent out 500 questionnaires to graduates [illegible] the faculty. Instructors were very willing to respond to the offices' invitation to participate in discussing the work of the faculty and sent back many individual and group letters in reply.

USSR 574/13
13 Feb 73

Acc. Nr: AP0044619 Ref. Code: UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48, Nr 1, pp 61-66

# HIATUS HERNIA AND PEPTIC ULCER

*A. S. Stepenko, A. L. Grebenev, M. M. Salman, A. A. Brodskaya*

Summary

The results of studies of 50 patients suffering from gastroduodenal peptic ulcer are presented. For the detection of hiatus hernia the authors conducted complex studies including roentgenological investigation and esophagotonokymography. Axial hernia was revealed in 20 per cent of patients, this giving grounds to consider it as one of the complications of ulcer. The concomitance of hiatus hernia changes somewhat the clinical picture and requires certain corrections in the treatment of patients with peptic ulcer.

1/1

REEL/FRAME
19771296

42 02

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTROLYTIC TREATMENT OF SEWAGE AS A METHOD OF ITS DEHELMINTHIZATION -U-
AUTHOR-(02)-GREBENEVICH, YE.V., PLYUSHCHEVA, G.L.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL 39, NR 3, PP 315-318
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PARASITE, ELECTROLYSIS, WASTE TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0199 STEP NO--UR/0358/70/039/003/0315/0318

CIRC ACCESSION NO--AP0123968
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED POSSIBILITIES OF DEHELMINTHIZATION OF SEWAGE BY ELECTROLYTIC TREATMENT. THE STUDY WAS CARRIED OUT ON A LABORATORY MODEL OF ELECTROLYSER FLOTATOR. EGGS OF AS. SUUM WERE ADDED TO UNCLARIFIED SEWAGE. THE DECLINE IN THE CONTENT OF HELMINTH EGGS IN THE SEWAGE WAS DIRECTLY PROPORTIONAL TO THE CURRENT POWER USED. THE AVERAGE PERCENT OF REDUCTION OF THE HELMINTH EGG CONTENT WAS 93 AT 75 A-HR-M PRIME3 AND OVER 98 AT 200 A-HR-M PRIME3. AN INCREASE IN DEHELMINTHIZATION EFFECT UPON AN INCREASE OF CURRENT POWER IS ASSOCIATED WITH AN INCREASED DEGREE OF FLUID CLARIFICATION. ELECTROLYTIC TREATMENT OF SEWAGE AT THE CURRENT POWER OF AT LEAST 150 A-HR-M PRIME3 RESULTS IN ALMOST COMPLETE DEHELMINTHIZATION OF SEWAGE.

FACILITY: INSTITUT MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM MARTSINOYSKOGO AKADEMIYA KOMMUNAL'NOGO KHOZYAYSTVA IM PAMFILOVA.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--MAGNETIC PROPERTIES OF UNALLOYED TRANSFORMER STEEL UNDER VARYING ANNEALING CONDITIONS -U-

AUTHOR-(05)-GREBENIK, N.P., DEVYOTKO, V.I., KAZADZHAN, L.B., MIRONOV, L.V., LOSEV, K.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. FIZ. 1970, 34(2), 348-50

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--TRANSFORMER STEEL, MAGNETIC PROPERTY, ANNEALING, ALLOY DESIGNATION, COLD ROLLING, MAGNETIC INDUCTION/(U)08KP LOW CARBON STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0180 STEP NO--UR/0048/70/034/002/0348/0350

CIRC ACCESSION NO--AP0115884

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL GRADE 08KP (C 0.065, SI TRACES, MN 0.52, P 0.015, S 0.011, NI 0.07, CR 0.07, CU 0.09, AND AL 0.01 WT. PERCENT) MELTED IN AN ELEC. ARC FURNACE. BANDS, 3.0 MM THICK, WERE SUBJECTED TO BLACK ANNEALING AT 780DEGREES, WHEREUPON THE C CONTENT DECREASED TO 0.009-0.015PERCENT. AFTER PICKLING THE STEEL WAS COLD ROLLED TO 0.50 MM THICKNESS. SPECIMENS WERE CUT OUT LONGITUDINALLY AND TRANSVERSE TO THE ROLLING DIRECTION AND ANNEALED AT 10 PRIME NEGATIVE2 TORR AT VARIOUS CONDITIONS. MAGNETIC AGING WAS TESTED AT 120DEGREES FOR 120 HR. MAGNETIC INDUCTION SIGNIFICANTLY INCREASED WITH RISING TEMP., REACHING A MAX. AT 700-20DEGREES. THE SP. CORE LOSSES OCCURRED WITH INCREASING ANNEALING TEMP. TO 700-50DEGREES; HIGHER TEMPS. CAUSED ONLY SMALL DECREASES. INCREASING THE HOLDING TIME OVER 1.5-2 HR AT 750DEGREES HAD LITTLE EFFECT ON THE SP. CORE LOSSES. THE AGING AFFECTED THE SP. CORE LOSSES LITTLE. THE ANISOTROPY OF MAGNETIC INDUCTION DID NOT EXCEED 4PERCENT. TO PREVENT WELDING TOGETHER OF SHEETS THE ANNEALING TEMP. SHOULD BE LESS THAN OR EQUAL TO 800DEGREES AND HOLDING TIME LESS THAN OR EQUAL TO 2 HR.

FACILITY: TSNIICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 539.4

GREBENIK, V. M., DIDYK, R. P., TESLENKO, A. G., TSANKO, V. K., (Dnepropetrovsk)

"Fatigue Strength of Metals with Explosive Hardening"

Kiev, Problemy Prochnosti, No 8, 1972, pp 114-116.

Abstract: The fatigue strengths of metals subjected to explosive hardening is estimated. Analysis of the data produced experimentally showed that the change in fatigue strength (increase in fatigue limit) resulting from explosive hardening is approximately 1.5 kg/mm$^2$ for a steel containing 0.42% C, 0.52% Mn, 0.23% Si, 0.61% Cr and 1.14% Ni following an explosion producing a pressure at the division boundary between explosion products and metal of 220 kbar. The sharp increase in strength characteristics and changes in hardness of surfaces produced for a steel with 0.46% C, 0.77% Mn, 0.39% Si, 1.16% Cr and 0.15% Ni make this material particularly resistant to wear and the influence of sign-changing loads.

USSR UDC: 519.54

VASKAN, F. K., GREBENIKOV, Ye. A.

"Concerning the Existence of Conditionally Periodic Solutions of Systems of Ordinary Differential Equations With Slow and Fast Variables"

Kishinev, IAN Moldavskoy SSR: Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 1, 1971, pp 3-12

Abstract: The authors study the existence of conditionally periodic or nearly conditionally periodic solutions of a system of differential equations of the form

$$\frac{dp}{dt} = P(p, q),$$
$$\frac{dq}{dt} = \omega(p) + Q(p, q), \qquad (1)$$

where the norms of functions P and Q are small quantities of the order of the small parameter $\mu$; $p = (p_1, p_2, \ldots, p_m)$ is the m-dimensional vector of the slow variables; $q = (q_1, q_2, \ldots, q_n)$ is the n-dimensional vector of the

1/2

USSR

VASKAN, F. K., GREBENIKOV, Ye. A., IAN MoldSSR, Ser. Fiz-Tekhn. i Mat. Nauk, No 1, 1971, pp 3-12

fast variables; $\omega(p)$ is the n-dimensional vector of the frequencies; the vector functions $P(p,q)$ and $Q(p,q)$ are represented by the functions

$$P(p, q)=\sum_{|k|>0} P_k(p)\, e^{i(k, q)},$$

$$Q(p, q)=\sum_{|k|>0} Q_k(p)\, e^{i(k, q)} \qquad (2)$$

$$\left((k, q)=\sum_{i=1}^{n} k_i q_i, \quad |k|=\sum_{i=1}^{n} |k_i|\right)$$

and defined in the region $G_{m+n}=(|\operatorname{Im} q|<\rho,\ p\in W)$. Following the methods of Kolmogorov, Bogolyubov, and Mitropol'skiy, the authors prove the reducibility of system (1) to some other system for which the existence of conditionally periodic solutions is obvious. The reducibility problem is defined as a problem of existence of a convergent iteration process which reduces system (1) to a limit system. The analysis is also extended to the case of rational frequency dependence. Bibliography of three titles.

2/2

1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--REDUCIBILITY OF MULTIFREQUENCY SYSTEMS OF DIFFERENTIAL EQUATIONS WITH SUMMABLE SERIES -U-

AUTHOR-(02)-GREBENIKOV, YE.A., VASKAN, F.K.

COUNTRY OF INFO--USSR

SOURCE--MINSK, DIFFERENTSIAL'NYYE URAVNENIYA, MARCH 1970, PP 403-11

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--PERIODIC SOLUTION, DIFFERENTIAL EQUATION SYSTEM, SERIES

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1427 STEP NO--UR/0376/70/000/000/0403/0411

CIRC ACCESSION NO--AP0125061

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125061
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE MULTIVARIATE SYSTEM DP DIVIDED BY DT EQUALS P(P,Q), DQ DIVIDED BY DT EQUALS OMEGA (P) PLUS Q(P,Q). WHERE P, Q IS THE SUM OF A SERIES SUMMABLE IN THE SCHWARZ SENSE, HAS A SOLUTION CLOSE TO CONDITIONALLY PERIODIC. THE INTERVAL OF TIME IN WHICH THE SOLUTION OF THE SYSTEM IS CLOSE TO CONDITIONALLY PERIODIC IS DETERMINED. THREE THEOREMS ARE PRESENTED. FACILITY: LUMUMBA UNIVERSITY OF PEOPLES' FRIENDSHIP.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--METHOD OF CONSTRUCTING AN ANALYTICAL TRIGONOMETRIC THEORY OF THE MOTION OF RESONANCE ASTEROIDS -U-

AUTHOR--GREBENIKOV, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 431-440

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--CELESTIAL BODY MOTION, ASTEROID, JUPITER PLANET, THREE BODY PROBLEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1755 STEP NO--UR/0033/70/047/002/0431/0440

CIRC ACCESSION NO--AP0125371

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125371
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A METHOD OF CONSTRUCTING AN ANALYTICAL THEORY OF THE MOTION OF ASTEROIDS WHOSE MEAN MOTIONS ARE COMMENSURABLE, OR ALMOST COMMENSURABLE, WITH THE JOVIAN MEAN MOTION. THE THEORY THUS OBTAINED DOES NOT CONTAIN SECULAR INEQUALITIES. A DISTINCTIVE FEATURE OF THE METHOD PROPOSED IS THAT NOT THE KEPLERIAN ELLIPSE BUT RATHER A SOLUTION TO A VARIANT OF THE RESTRICTED THREE BODY PROBLEM IS TAKEN AS THE (ZERO APPROXIMATION) INTERMEDIATE ORBIT. THE PERTURBATIONS IN THE INTERMEDIATE ORBIT ARE THEN CALCULATED BY BOGOLUBOV'S METHOD WIDELY USED IN NONLINEAR OSCILLATION THEORY.
FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

MATHEMATICS

Differential & Integral Equations

USSR

GRUDEMIKOV, Yu. A.; VASHAN, F. K. (Lumumba University of Peoples' Friendship)

"Reducibility of Multifrequency Systems of Differential Equations with Summable Series"

Minsk, Differentsial'nyye Uravneniya; March, 1970; pp 403-11

ABSTRACT: It is shown that the multivariate system

$$\frac{dp}{dt} = P(p, q), \frac{dq}{dt} = \omega(p) + Q(p, q),$$

where P, Q is the sum of a series summable in the Schwarz sense, has a solution close to conditionally periodic. The interval of time in which the solution of the system is close to conditionally periodic is determined. Three theorems are presented.

The article includes 33 equations. There are 6 references.

1/1

USSR

UDC 621.316.722.1(088.8)

GREBENKIN, I.A.

"Bridge Rectifier--Regulator"

USSR Author's Certificate No 253170, Filed 22 July 68, Published 24 Feb 70 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B376P)

Translation: A circuit is patented for a bridge rectifier consisting of two semiconductor diodes and two transistors, controlled with the aid of a negative feed back signal from the output. To accomplish this, a silicon stabilitron is installed at the rectifier output -- the source of reference voltage, in series with which the emitter junctions of two added transistors are connected, each of which plays the role of an element for comparison and amplification of one of the two half-periods. The collector circuit of the transistors in question are connected via the semiconductor diodes with the bases of the controlling transistors connected into the bridge circuit. The power supply for the collector circuits is accomplished via resistors from an added source of d-c voltage. Averaging of the output voltage is guaranteed by a capacitor. 1 ill. S.D.

1/1

USSR

UDC 669.14+15:539.43

GREBENIK, V. M., GORDIYENKO, A. V., and TSAPKO, V. K., Dnepropetrovsk Metallurgical Institute

"Dependences Between the Fatigue and Static Characteristics of Carbon and Alloyed Steels"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 164-169

Abstract: As a result of the statistical processing of a large amount of experimental data the authors have found the dependences between the fatigue and the static characteristics individually for carbonaceous and alloyed steels. They give evaluations of the dependences obtained that permit determining the necessary characteristics with the required confidence and using them for designing components for strength and durability.

USSR

GREBENIK, V. M., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 10, 1973, pp 164-169

The authors use several graphs to illustrate their findings. They have compiled one long table to show numerically the results of a correlation analysis of the fatigue and static characteristics of carbonaceous and alloyed steels.

The article contains 3 illustrations, 1 table, and 4 bibliographic references.

2/2

USSR

UDC 669.71'721'782

GREBENKIN, V. S., SIL'CHENKO, T. V., GORSHKOV, A. A. and DZYKOVICH, I. YA., Institute of Casting Problems, Academy of Sciences Ukrainian SSR

"Effect of Magnesium on Tin and Lead Distribution in Aluminum-Silicon Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 50-54

Abstract: The impurities in secondary aluminum alloys include readily fusible and liquation-prone $\beta$-type elements such as Sn, Pb, As, Sb (up to 0.1-0.2% of each) which appear to impair the mechanical properties of the alloys at both room and higher temperatures. Alkaline, alkali-earth, transition (Ti, Zr, V), and rare-earth elements form chemical compounds with the $\beta$-type elements and under certain conditions neutralize their adverse effect in the alloys. This study involving Al-Si-Mg alloys with Sn and Pb additions to the Mg Si-type phase revealed appreciable amounts of Sn and Pb which had affected the phase composition and changed it to $Mg_2Si_{0.3}\beta_{0.7}$ ($\beta$ = Sn or Pb). In Al-Si-Cu-Mg alloys Pb and Sn act to hinder the formation of the quaternary phase $W(Al_xMg_5Cu_4Si_4)$ while promoting the

USSR

GREBENKIN, V. S., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 50-54

formation of the $Mg_2Si$ phase which also contains Cu, Sn and Pb. In Al-Si-Cu-Mg alloys, Sn hinders while Pb promotes the formation of the $CuAl_2$ phase. There were no inclusions of free Sn in the Al-Si-Mg and Al-Si-Cu-Mg alloys. Despite the low Mg contents in the chemical compounds, they appear to have combined the entire tin. The study shows that both Sn and Pb are electronic analogs of Si. They are capable of substituting for Si in $Mg_2Si$ or $W(Al_xMg_5Cu_4Si_4)$-type magnesium compounds, making it possible to neutralize the adverse effect of Sn and Pb in aluminum alloys. (1 illustration, 3 tables, 14 bibliographic references).

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--X RAY DIFFRACTION STUDY OF DERIVATIVES OF TRYPSIN INHIBITED BY DIISOPROPYL FLUOROPHOSPHATE -U-

AUTHOR-(05)-VAYNSHTEYN, B.K., ARUTYUNYAN, E.G., ZAYTSEV, V.N., KURANOVA, I.P., GREBENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 167-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, PLATINUM COMPOUND, MERCURY COMPOUND, ENZYME ACTIVITY, INHIBITION, FLUORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND, X RAY DIFFRACTION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0223 STEP NO--UR/0070/70/015/001/0167/0168

CIRC ACCESSION NO--AP0119219

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119219

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PT AND HG DERIVS. OF TRYPSIN WERE PREPD. BY THE DIFFUSION METHOD, AND THE COORDINATES OF THE PT AND HG ATOMS IN THE CRYSTALS WERE DETD. BY X RAY DIFFRACTION. THE UNIT CELL PARAMETERS ARE A 58.65 PLUS OR MINUS 0.01, B 67.05 PLUS OR MINUS 0.01, AND C EQUALS 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE PT DERIV. AND A 58.56 PLUS OR MINUS 0.02, B 67.42 PLUS OR MINUS 0.02, AND C 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE HG DERIV. THE MAX. DEVIATIONS FROM THE PARAMETERS OF THE INITIAL TRYPSIN UNIT ALL WERE 0.34 AND 0.06 ANGSTROM FOR THE PT AND HG DERIVS., RESP. THE COORDINATES OF THE HG ATOM WERE DETD. TO BE X EQUALS 0.962, Y EQUALS 0.035, AND Z EQUALS 0.195. FOR PT, HOWEVER, CALCNS. YIELDED 2 VARIATIONS OF THE COORDINATES.

FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.311.25:621.039.56

GREBEN'KOV, ZH. A., SAUNIN, YE. V., TOKAR', M. S.

"System for All-around Automation of a High-Power Atomic Electric Power Plant based on a Control Computer"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 131-137 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U128)

Translation: A basis is provided for the necessity of constructing an all-around automation system for high-power atomic electric power plants based on the control computer, and the basic principles of constructing this system on the basis of one of the models of the aggregate system of computer devices are presented. The bibliography has 13 entries.

1/1

USSR

UDC 669.87:669.22:669.21:539.216.2

GREBENNIK, I. P., and TONKOPRYAD, A. G., Kharkov State University imeni A. M. Gor'kiy

"Electronographic Study of Thin Indium Films in Contact with Silver and Gold Films"

Sverdlovsk, Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 524-528

Abstract: Processes were studied, by electronography, which occur in the contact zone of silver and gold thin films with an indium film. It was shown that phi- and $AuIn_2$-phases are formed in the contact zone and possess a maximum indium content. Near the In-Au and In-Ag interfaces, regions of propagation are observed in which the $AuIn_2$- and phi-phases are formed with the richest indium content. During extended annealing of indium on silver the propagation region contains the xi-phase near the silver. Movement of the boundary of the two-component region in both cases can be described as combined surface-volume diffusion with activation energies of 9 and 12 kcal/mole for propagation of indium through silver and gold, respectively. Three figures, six bibliographic references.

1/1

USSR

UDC 669.22:539.216.2:548.526

PINES, B. Ya., GREBENNIK, I. P., and GEKTINA, I. V., Khar'kov State University imeni A. M. Gor'kiy

"Surface Diffusion on Silver and Nickel Thin Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1320-1322

Abstract: Samples were prepared for investigating surface diffusion by means of vacuum condensation on a metallic substrate B (layer thickness = 100-200 A) onto which was sprayed a layer of the diffusing substance A of the same thickness but with a smaller area having a sharp boundary. Both diffusion of Ag in Ni and Ni in Ag were studied electronographically with diffusion of Ag in nickel done at 400-750° C and Ni in silver at 500-850° C. From this the minimum electronographically fixed thickness of the "filled" component was determined. Here double-layer films of Ag+Ni were studied by changing the ratio of component thicknesses. As one would expect, the diffraction lines from the thin film of an impurity, modeling the diffusing component in tests on surface diffusion, are observed in a limited concentration interval, which was associated with the sensitivity of the electronographic phase analysis.
1/2

USSR

PINES, B. Ya., et al, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1320-1322

It turned out that the impurity was electronographically and reliably fixed in the amount of 4% (by wt) Ni in Ag and 3% (by wt) Ag in Ni. Recalculation of concentrations leads to values of $a_{Ni}$ 8Å and $a_{Ag}$ 5Å. A comparison of the intensity of diffraction lines of the component diffused into the surface with the intensity of the same lines from the impurity in the double-layer tests showed that, in view of their coincidence, the surface diffusion is accomplished in the layer, comparable in thickness, with an effective thickness of the impurity in the double-layer film. This does not exclude, with consideration of the sensitivity limitation of the electronographical method, that diffusion actually occurs in the layer of single-atom thickness.

2/2

USSR UDC: 681.3

MURASHKO, A. G., TERENT'YEV, M. F., GREBENNIK, L. A.

"On One Principle of Constructing Combination Computers"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog--Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 60-66 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V551)

Translation: This article considers formulation of the problem of constructing a computer system with controllable precision and speed. The structure of such a system is briefly described. Authors' abstract.

1/1

USSR

UDC 681.3.06:51

YEFIMOV, A. N., GREBENNIK, V. D.

"Construction of Optimal Procedure for Collection of Information in Automatic Control and Testing Systems"

Kibernet. Tekhnika. vyp. 4 [Cybernetic Equipment, No 4 -- Collection of Works], Kiev, 1970, pp 4-19, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V605).

NO ABSTRACT.

1/1